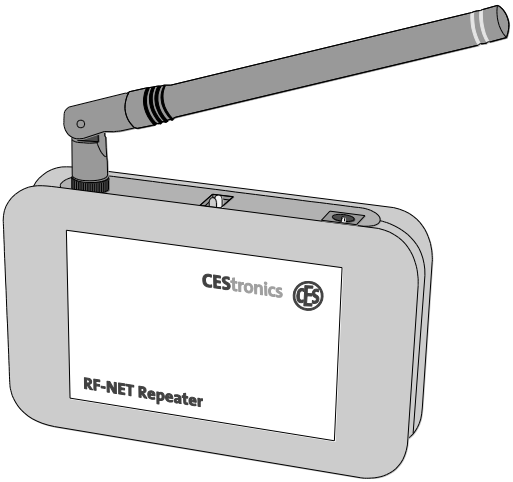
CESTronics

RF-NET Repeater

Fitting and Operating Instructions



Translated Fitting and Operating Instructions
Version 1.2, 09/2012

Preface

These Fitting and Operating Instructions will help you fit and use the RF-NET Repeater (Repeater)

- as intended,
- safely, and
- advantageously.

Any person who

- fits,
- operates, or
- disposes of

this Repeater must have read and understood the entire contents of these Fitting and Operating Instructions.
These Fitting and Operating Instructions should be kept near the Repeater at all times.

Notes on the layout

In these Fitting and Operating Instructions, various elements are highlighted with defined layout features so you can identify at a glance whether a passage contains

standard text,

- a list, or

▸ individual steps in a sequence of actions.

Notes highlighted with this symbol contain additional information on the efficient use of the Repeater.

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For your safety

⚠ Basic safety instructions

Observe all warnings and notes in these Fitting and Operating Instructions when fitting, programming and using theRepeater. Always keep these Fitting and Operating Instructions near the Repeater.

Make sure you are using the latest version of this manual. The manual is available free of charge at **www.ces.eu**.

Danger of explosion

- Live parts of the Repeater may cause an explosion. Do not use the Repeater in potentially explosive atmospheres.

Danger of suffocation

- Never allow children to play with packaging material and/or plastic bags. There is a risk that children pull them over their head and suffocate.

Danger of poisoning

- Always keep the Repeater out of reach of children. There is a risk that children swallow small parts such as batteries or screws.

Danger of property damage

- Always have repairs performed by properly qualified personnel.
- Only use accessories and spare parts recommended by CEStronics.

- Do not drop the Repeater on the floor, on hard surfaces or on hard objects.
- Use surge arresters to avoid damage to your Repeater through overvoltage, for example by lightning.
- Protect the electronic components of the Repeater against water and other liquids.
- The Repeater contains highly sensitive electronic parts that may be damaged or destroyed through static charges. Do not disassemble the Repeater in rooms with built up static charge. Ensure potential equalization when working on the Repeater to remove any static charge.
- Do not use the Repeater in corrosive atmospheres (chlorine, ammonia, lime water).
- Only use the Repeater in rooms in which the humidity does not exceed 95 %.
- Do not use the Repeater in rooms with a high level of dust formation.
- Do not use the Repeater near sources of heat.
- Do not expose the Repeater to temperatures below 0 °C or above +40 °C.

Danger of malfunctions

- Do not cover the housing of the Repeater with any metallic material.
- Satisfy yourself when installing the Repeater that the Repeater and all other system components are in perfect working order. Malfunctions of the Repeater and other system components may compromise the functioning of the entire system.
- If necessary, use uninterrupted power supply (UPS) systems to ensure an uninterrupted operation of your locking system.

Explanation of the safety notes

These Fitting and Operating Instructions include safety notes of the following types:

CAUTION

CAUTION notes warn against hazards that may result in slight or medium injuries.

Notes

NOTICE

Notes warn against possible property or environmental damage.

Intended use

The Repeater serves to extend the range of the data transmission between locking devices and Access Points within the CEStronics RF-NET radio network. Data are transmitted between the Repeater and the locking devices and Access Points via 868 MHz radio signals. The Repeater does not work without an Access Point. The Repeater is exclusively intended and may only be used for that purpose.

Any other use is considered to be improper and may result in property damage or even personal injury.

CEStronics GmbH does not accept any liability for any damage resulting from improper use.

Versions

These Fitting and Operating Instructions are only valid for:

- **CEStronics RF-NET Repeater**

Manufacturer

The manufacturer of the RF-NET Repeater is:

CEStronics GmbH
Friedrichstr. 243
42551 Velbert, Germany
Phone: +49 (0) 2051-204-0
Fax: +49 (0) 2051-204-105
www.ces.eu

Service

For service support please contact your professional CEStronics partner.

Introduction

Description

The Repeater part of the OMEGA system. It extends existing radio links between installed Access Points and locking devices by up to 25 metres.

For the operation of the Repeater no configuration is required; all necessary settings are made by the Repeater itself.

To put the Repeater into service, you only have to select a suitable place of installation and fasten the Repeater.

Once powered on, the Repeater will automatically establish the connection with the Access Points.

Other features of the Repeaters:

- Integrated 868 MHz RF transceiver.
- Range increase of up to 25 metres.
- One Repeater can be used for each Access Point.
- The Repeater is supplied with electric power by the power pack delivered together with the Repeater. The use of any other power packs is not permitted.
- Two colour LEDs for visual signalization of data traffic.

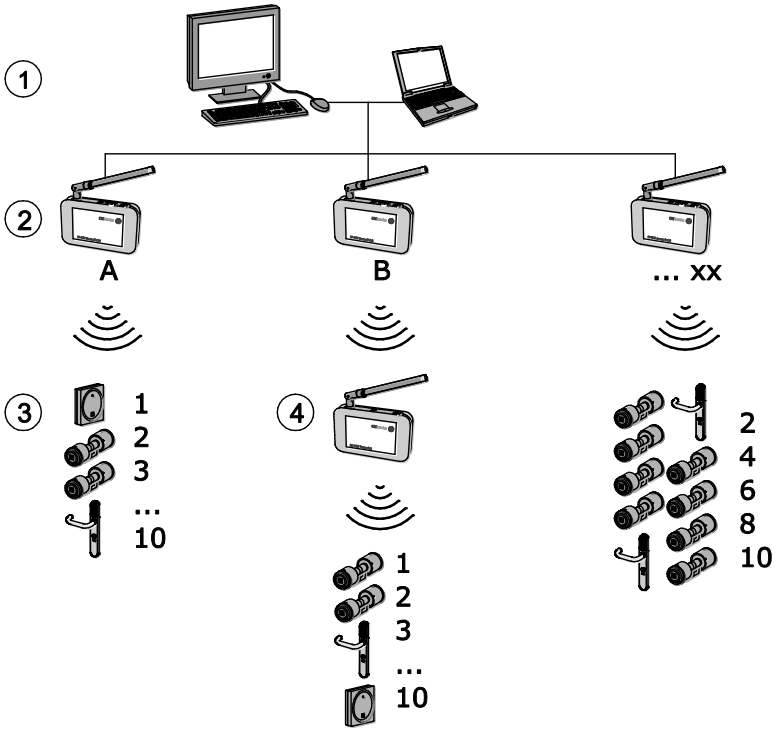
The stated maximum range increase of 25 metres cannot be guaranteed as it depends on the local building conditions. CEStronics recommends to have your building situation checked by your professional CEStronics partner.

Components of a wireless system with Repeater

Repeaters extend the radio link between your Access Points and locking devices by up to 25 metres.

The following components are required for the system:

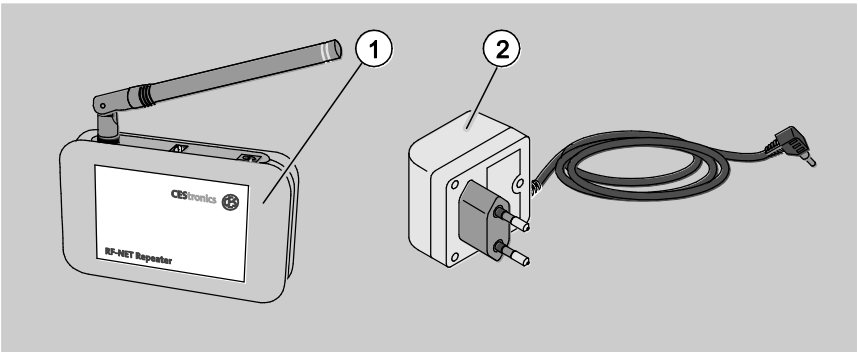
- Standard PC (1) with installed OMEGA software
- OMEGA Access Points (2)
- Locking devices (3)
- Repeater (4)



Scope of delivery

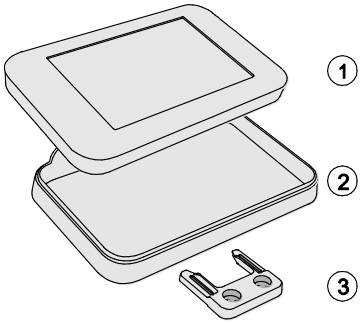
- Before proceeding with fitting and commissioning, please check the contents of the package and the scope of delivery.
- Check new devices for transport damage and inform your CEStronics partner promptly if any damage is found.

Device overview



1	Repeater
2	Plug-in power pack with connecting cable

Housing parts



1	Housing top
2	Housing bottom
3	Wall mount

Unpacking the Repeater

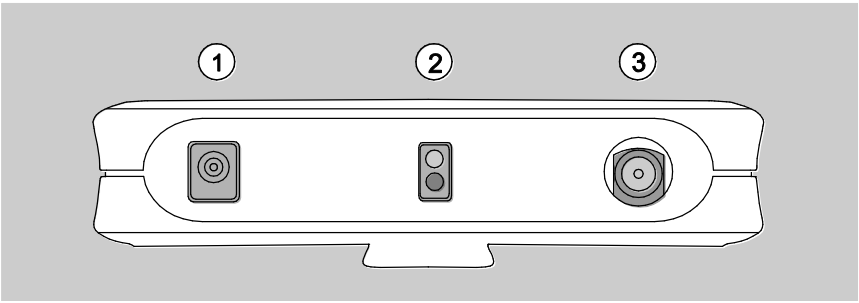
- Take the Repeater out of the package and remove any packaging material such as film, padding and packaging board.

NOTICE

Risk of damage to the Repeater.

- Only use the plug-in power supply delivered with the device to supply your Repeater with power.

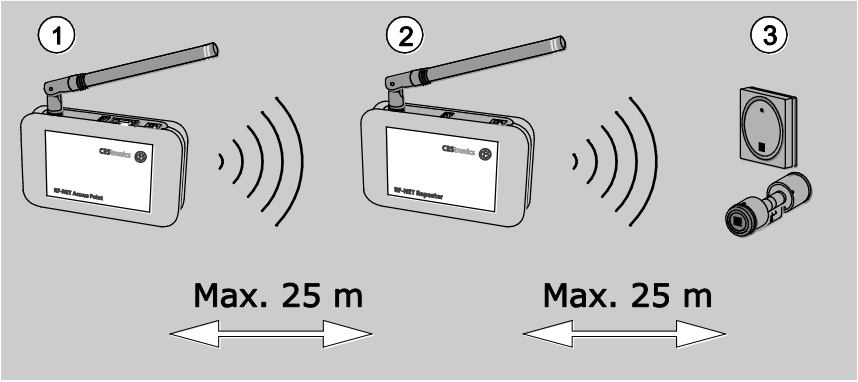
Connections



1	Socket for the plug-in power supply
2	LEDs for signalling RF traffic and server connection
3	Screw terminal for the antenna

RF ranges

- Ensure that the permissible RF ranges are observed. Install the Repeaters within the maximum RF range of 25 metres each.



The maximum RF distance between Access Point (1) and Repeater (2) is 25 metres.

The maximum RF distances between Repeater (2) and locking devices (3) is 25 meters.

The RF range may vary considerably depending on the building situation. See also note on page 8.

Checking the range

The optional RF-TRACE-MASTER allows you to check the quality of the radio frequency (RF) link between the OMEGA server and your locking devices.

The RF-TRACE-MASTER triggers the following signals of your locking devices:

- Green LED of your locking cylinder, IES or wall terminal flashes twice: very strong RF link.
- Green LED of your locking cylinder, IES or wall terminal flashes once: adequate RF link.
- Red LED of your locking cylinder, IES or wall terminal flashes: RF link is not OK and must be checked.
- Red and green LEDs flash alternately or simultaneously: weak RF link.

To verify the quality of the RF link to your locking devices, proceed as follows:

▸ Hold the RF-TRACE-MASTER in front of your locking device.

The verification is performed immediately.

During the verification, the Access Point emits the same signals as the locking device.

Fitting the Repeater

NOTICE

If a Repeater fails, your locking devices cannot be reached any more.

- Make sure that the Repeaters are always easily accessible for servicing.
- Make sure that all electrical connections can be separated at any time.

NOTICE

The Repeater may be damaged if not fitted properly.

- Only skilled personnel may fit the Repeater.
- This personnel must have been trained on the product by CEStronics or a CEStronics partner.

NOTICE

Static charges may damage or interfere with the electronic components of the Repeater.

- Do not disassemble the Repeater in rooms with built up static charge.
- Ensure potential equalization when working on the Repeater to remove any static charge.

When fitting the Repeater, you must ensure the following conditions:

- Make sure that the power supply and the power supply cable can be plugged in.
- The Repeater must not be fitted on metallic surfaces.
- Always install the Repeater as far away from ground potentials as possible to avoid interference with the radio traffic.
- Do not fit the Repeater in the immediate vicinity to Access Points or other Repeaters.
- The Repeater may not be fitted outdoors.

The Repeater is supplied preassembled. To commission your Repeater, you only have to fasten the wall mount at a suitable position and push the Repeater on to the wall mount.

You require suitable fasteners for the wall mount of the Repeater. Which fasteners and related tools you need, depends on the surface at the place of installation.

- Purchase suitable fasteners material from your specialized fasteners dealer.

CAUTION

Danger of injury by improper fitting.

- Ensure that the Repeater is only fitted by appropriately trained skilled personnel.

The Repeater must be fitted at an easily accessible location, e.g. near a ceiling or on a wall.

Suitable fitting positions are for instance

- above a door frame, at a height of about 2 metres with as much distance to the nearest object or wall as possible, or
- similar positions at a height of about 2 metres or more and also with as much distance to the nearest object or wall as possible.

The Repeater is to be installed with the ports pointing upwards. This fitting position is the basis of the Declaration of Conformity.

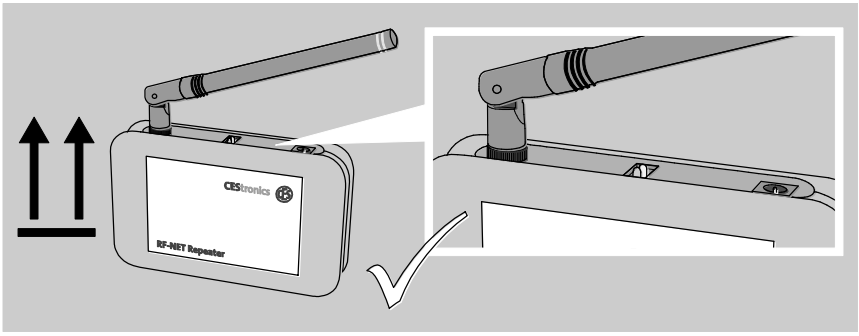
Other fitting positions are possible but the operator's responsibility.

▸ In case of lateral fitting, you, as the operator, are responsible for the safe fitting.

NOTICE

Danger of injury by improper fitting.

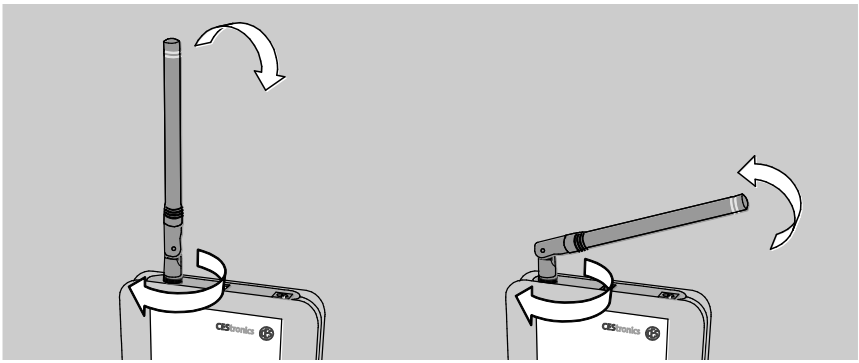
▸ Ensure safe fitting if the repeater is fitted laterally.



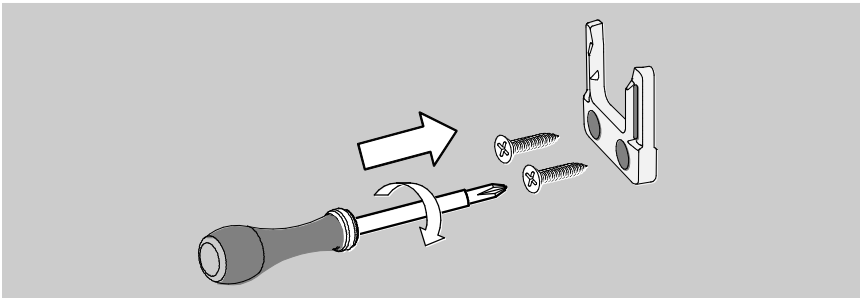
Wherever possible, you should check the reception before the final fastening to determine the orientation of the Repeater and the antenna:

- For this purpose, put the Repeater temporarily into service (see page 18 ff).
- Verify the reception at your locking devices with the RF-TRACE-MASTER card (see page 12).

The orientation of the antenna can be adjusted. As long as the antenna has not yet been screwed in tight, it can be rotated by 360°. After it has been tightened, the antenna can only be aligned vertically and horizontally.

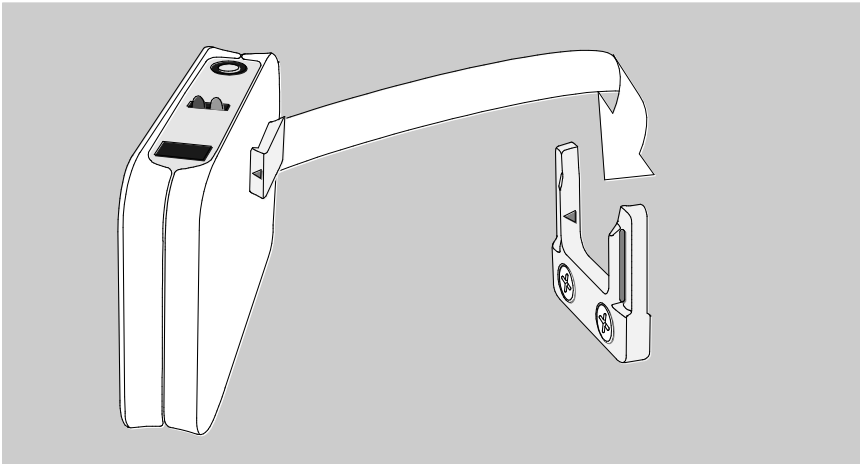


- If the RF link is satisfactory, fit the Repeater permanently in the determined position:
- Fasten the wall mount with suitable fasteners at a right angle at its proper position.

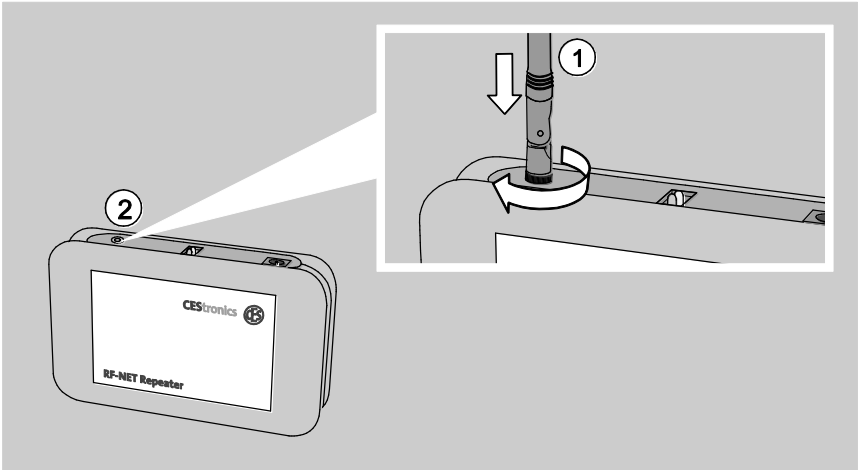


- Push the Repeater onto the wall mount.

The Repeater only sits properly after it has snapped into place in the wall mount.



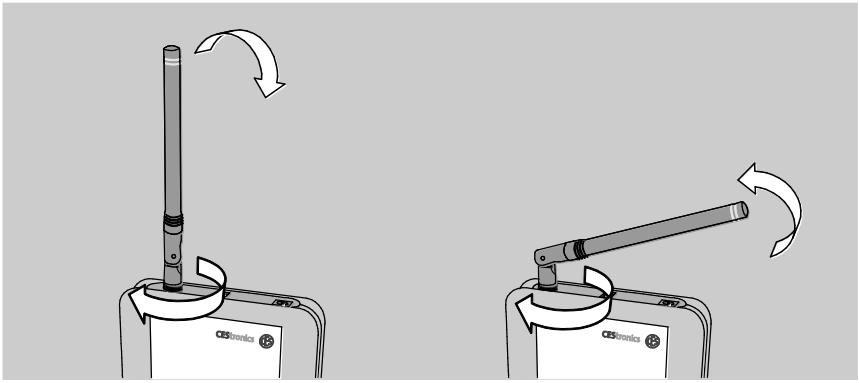
- Do not yet screw the antenna (1) tight into the antenna base (2) at this time. Do not use any tools for tightening.



- Establish the required cable connections as described on page 11 "Connections".
- Put the Repeater into service.

- Check the orientation of the antenna to ensure sufficient effective radiated power.
- Use the optional RF-TRACE-MASTER to check the effective radiated power (see also note on page 12 "Checking the range").
- Orientate the antenna so that your locking devices receive the maximum effective radiated power.

As long as the antenna has not yet been screwed in tight, you can rotate it by 360° and align it vertically and horizontally.



- Once you have found the best position of the antenna, tighten it with your hand. Never use a tool to tighten the antenna.

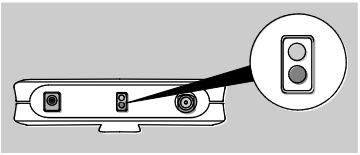
The antenna is tight if it can no longer be rotated.

NOTICE

The printed circuit board of the Repeater may be damaged through mechanical forces.

- Be careful not to damage the printed circuit board when fitting the antenna.

- If possible, verify the perfect functioning of the Repeater already at this stage:

Normal operation	
Signal location	**Meaning**
	Does the data exchange with locking devices work? The two LEDs signal the following conditions:

Signal	**Meaning**
Green LED, flashing	Data exchange with locking devices
Red LED, flashing	Operative

Trouble shooting

Symptom	Possible cause and remedy
No connection to the locking devices can be established.	Your connection cables are mechanically damaged or broken. ▸ Check the installation for broken wires or faulty connections. ▸ Check the continuity of your wires with a suitable instrument (multimeter, ohmmeter). ▸ Verify the proper functioning of the plug-in power supply of the Access Point and/or the Repeater with a suitable instrument (multimeter, ohmmeter). ▸ Check the plug-in power supply for mechanical damage. ▸ Check the signalization of the LEDs ▸ Eliminate any interruptions and repair any damage found. ▸ In case of mechanical damage, have your Repeater repaired by your CEStronics partner.

No connection to the locking devices can be established.	The Access Point and/or the Repeater has no connection to the power supply and/or the network. ▸ Check the terminals and connections. ▸ Establish missing connections. ▸ Check the signalization of the LEDs.
	Locking devices are outside the radio frequency range of your Repeater. ▸ Reduce the distance to your locking devices. ▸ Verify the quality of the radio frequency transmission with the optional RF-TRACE-Master.
	The locking devices have no power. ▸ Check the power supply of your locking devices. ▸ Re-establish the proper power supply of your locking devices. ▸ For further information on establishing the power supply, please refer to the operating instructions of your locking devices. ▸ Replace any flat batteries of your locking devices. ▸ For further information on the replacement of batteries, please refer to the operating instructions of your locking devices.
No connection to the locking devices	The OMEGA software is not configured correctly. Your PC does not work

can be established.	properly. ▸ Check the software settings as described in the OMEGA User Manual. ▸ Check the functioning of the software as described in the OMEGA User Manual. ▸ Verify the perfect functioning of your PC. ▸ If you are not able to verify the perfect functioning, please contact your PC dealer.

If the trouble still cannot be eliminated, please contact your CEStronics partner.

Maintenance

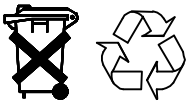
- Have the Repeater serviced and its perfect functioning verified every six months by CEStronics or by a CEStronics partner only.

Spare Parts

The Repeater does not require any spare parts for you to change.

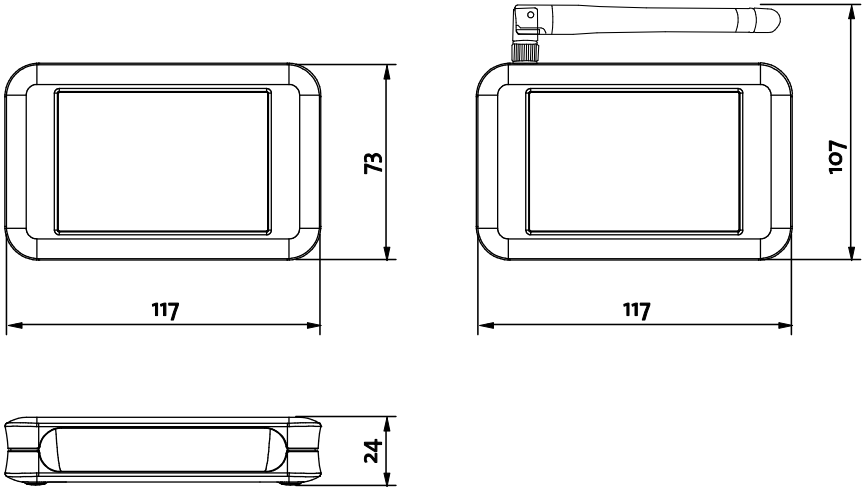
- If you need service, please contact your professional CES partner.

Disposal



Neither the Repeater, nor any parts of the Repeater may be discarded with the normal household waste. Ask your local authorities about recycling and/or the proper disposal of the device in line with environmental regulations.

Technical data



Dimensions:	Length: approx. 117 mm, Width: approx. 107 mm, Height: approx. 24 mm
Power supply: Power pack:	100–240 V AC, only via the power pack supplied (9 V DC)
Connection:	Phonoplug 5.5 × 2.1 mm 5.5 mm: -, 2.1 mm: +
Communication frequency:	Sending/transmitting 868 MHz
Network protocol:	TCP/IP
RF range:	approx. 25 m
Temperature rage:	0 °C to +40 °C
Environmental conditions:	Not suitable for use in corrosive atmospheres (chlorine, ammonia, lime water). Maximum air humidity: 95 %
Service life of the Repeater:	At least 10 years

Glossary

Locking devices	Locking devices are locking cylinders electronic shields and wall terminals. If these are operating in RF mode, the Repeater can be linked with them.
Reader module	The reader module is installed in the outside knob of the locking cylinder or in the wall terminal. It detects your locking media.
Master media	Cards to program your locking devices. The OMEGA system comprises two types of Master media, the SYSTEM-MASTER and the PROGRAM-MASTER. Optional transponder cards also have Master medium status.
Locking medium	A medium with which you can lock and unlock an electronic locking cylinder and/or a wall terminal.
SYSTEM-MASTER	Master medium used to authorize PROGRAM-MASTERS for the system. For each locking system, there is one and only one SYSTEM-MASTER.
Transponder	A transponder is a wireless communication or control medium that receives signals and automatically responds to them.
RF-TRACE-Master	An optional Master card which enables you to test the quality of your RF link.
RF range	The distance within which a safe transmission of data is possible.

Notes on the manufacturer's warranty

As stated in our Standard Terms and Conditions, the manufacturer's warranty does not extend to the following types of damage:

- damage to outer mechanical parts and damage resulting from normal wear and tear
- damage as a consequence of external events or influence
- damage as a consequence of improper operation
- damage as a consequence of excess voltage
- damage as a consequence of fire, water or smoke.

All technical data and features are subject to change without notice.
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